Week 2 Assessment 1

TOTAL POINTS 14

1. **The file you downloaded for the 2005 data has a total of 46853 housing units. How many housing units does the file contain when you delete all housing units that have a market value (the variable 'VALUE') of less than 1000$?** 1 point

30514

2. **Similarly as question 1, how many housing units do the data files for the year 2007, 2009, 2011 and 2013 contain after you delete housing units that have a market value of less than 1000$?** 1 point

- 27795, 31318, 85050 and 36665 respectively
- 27785, 31318, 85040 and 36675 respectively
- 27795, 31317, 85040 and 36665 respectively
- (selected) 27785, 31317, 85050 and 36675 respectively

3. **The assignment outlined in the video lesson asks you to compare market values of occupied versus not occupied housing units across the various years. In the data files (after deleting all housing units that have a market value of less than 1000$) how many housing units are "Occupied" versus "not occupied" across various years?** 1 point

- 2005: 29440 Vs 1074
  2007: 26466 Vs 1319
  2009: 30082 Vs 1236
  2011: 82068 Vs 2972
  2013: 35418 Vs 1257
- (selected) 2005: 29440 Vs 1074
  2007: 26466 Vs 1319
  2009: 30081 Vs 1236
  2011: 82078 Vs 2972
  2013: 35418 Vs 1257
- 2005: 29440 Vs 1074
  2007: 26476 Vs 1319
  2009: 30082 Vs 1236
  2011: 82078 Vs 2972
  2013: 35418 Vs 1247
- 2005: 29440 Vs 1074
  2007: 26476 Vs 1319
  2009: 30081 Vs 1236
  2011: 82068 Vs 2972
  2013: 35418 Vs 1247

4. **What is the mean of the market value of an occupied housing unit in year 2007 (after deleting all units with a market value less than 1000$)? Please round your answers to two decimal places.** 1 point

278960.75

5. **What is the standard deviation of the market value of an occupied housing unit in year 2007 (after deleting all units with a market value less than 1000$)? Please round your answers to two decimal places.** 1 point

317162.77

6. **What is the mean and standard deviation of the market value of an not-occupied housing unit in year 2013 (after deleting all units with a market value less than 1000$)? Please round your answers to two decimal places.** 1 point

- (selected) 251996.82, 389653.09
- 251999.93, 389664.05
- 251991.09, 389643.01
- 251985.56, 389603.41

7. **In the video lesson you are asked to investigate whether there is a difference in market values of occupied versus not occupied housing units across various years. What would be an appropriate statistical test to do so?** 1 point

- Calculating the two means (for occupied and unoccupied units) and making a judgment call on their difference. [incorrect]
- A correlation across the two sets of values (for the occupied and unoccupied units).
- (selected) A difference in means hypothesis test across the two sets of values (occupied versus unoccupied).
- A chi square test of independence.

8. **If you were to do a difference in means hypothesis t-test, which of the following may not be an** 1 point

appropriate test?

- ○ Difference in means t-test assuming unequal variance
- ○ Difference in means t-test assuming equal variance.
- ◉ Difference in means paired t-test.

9. What would be an appropriate null and alternate hypothesis for the a difference in means test. Please mark all that apply. 1 point

- ☑ H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} = 0$
  H_A: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} \neq 0$
- ☑ H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} \geq 0$
  H_A: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} < 0$
- ☐ H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} > 0$
  H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} < 0$
- ☐ H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} < 0$
  H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} \geq 0$

10. Please report the t-statistic from the difference in means test using the 2011 data (after deleting housing units with market value of less than 1000$). Please round your answer to four decimal places 1 point

6.3970

11. Please report the t-statistic from the difference in means test using the 2013 data (after deleting housing units with market value of less than 1000$). Please round your answer to four decimal places 1 point

-0.2599

12. In which year(s) was the market value of housing units statistically different across the occupied and unoccupied units. Please mark all years that apply. 1 point

- ☑ 2005
- ☐ 2007
- ☐ 2009
- ☑ 2011
- ☐ 2013
- ☐ None of the above

13. In which year(s) was the market value of housing units statistically less for occupied units as compared to unoccupied units. Please mark all years that apply. 1 point

- ☐ 2005
- ☐ 2007
- ☐ 2009
- ☐ 2011
- ☐ 2013
- ☑ None of the above

14. Based on your analysis which of the following statements are supported. Please mark all that apply. 1 point

- ☐ The market value of occupied units is greater than that for unoccupied units across all years.
- ☑ The market value of occupied units is greater than that for unoccupied units across some years.
- ☐ The market value of occupied units is less than that for unoccupied units across all years.
- ☐ The market value of occupied units is less than that for unoccupied units across some years.
- ☑ The market value of occupied units is never less than that for unoccupied units across all years.
- ☐ The market value of occupied units is never greater than that for unoccupied units across all years.

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